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RESPONSE TO SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL COMMENTS ON DRAFT RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION WORK PLAN ADDENDUM ZONE K CNC CHARLESTON SC

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COMPREHENSIVE LONG-TERM ENVIRONMENTAL ACTION NAVY CHARLESTON NAVAL COMPLEX NORTH CHARLESTON, SOUTH CAROLINA CTO-029

RESPONSE TO COMMENTS ON THE DRAFT FINAL ZONE K RCRA FACILITY INVESTIGATION WORK PLAN ADDENDUM Dated December 22, 1999

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Prepared for:

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA

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RESPONSE TO SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) COMMENTS ON THE DRAFT FINAL ZONE K RCRA FACILITY INVESTIGATION WORK PLAN ADDENDUM Dated December 22, 1999

General Comment

Comment 1:
Several pump test wells and other type wells were not indicated on the figures. Please revise this information and include in the final report.

Response 1:
These wells will be shown on the figures in the final RFI report.

Comment 2:
Please note, the Navy should summarize the extent of contamination for all SWMUs. This must be done on maps and figures with the use of hatching, coloring, or by contours.

Response 2:
The extent of contamination will be shown for each contaminant of concern using contours, shading, and/or coloring in a manner consistent with the example figures previously provided to the project team.

Comment 3:
The Department suggests that all samples be analyzed for the full scan of contaminants to better enhance the data for each site. Where unusual constituents were historically located (i.e. explosives, fuel, pesticides, etc.) the analytical analysis should reflect these constituents in the test run on the samples.

Response 3:
Numerous samples have been collected at these SWMUs/AOCs for the full scan of analytes as proposed in the original Zone K Work Plan. The contingency sampling proposed in the work plan addendum targets areas where specific contaminants were identified from the previous sampling efforts as exceeding screening criteria and having not been delineated. Samples collected in areas representing potentially new sources (such as those recommended in Paul Bergstrand's December 2, 1999 facsimile [see comment 15]) will be analyzed for the full scan of contaminants depending on the site history.

Comment 4:
Based on the proposed sample locations and the subsequent results, the Navy may need to propose additional sampling locations to complete the characterization of the nature and extent of contamination for some SWMUs. The Department would like to reiterate that characterization of the nature and extent of contamination must be completed up to or below the MCL for all SWMUs and AOCs.

Response 4:
The Navy understands that additional sampling may be required to fully delineate soil and groundwater. Once the initial phase of sampling is complete, these data will be reviewed to determine areas where additional delineation is necessary.

SWMU 161

Comment 5:
Figure 2.1
The pump test wells observed during the field visit are not shown on map. Please revise the figure for the report.

Response 5:
These wells will be added to site maps in the final RFI report.

SWMU 162

Comment 6:
Page 2.2.4, Section 2.2.2 Data Gaps, Surface Soils, lines 1-2
This section states that Hg and As were found exceeding screening criteria but are not shown as such on figure 2.2. Please revise in report.

Response 6:
The arsenic exceedance is shown on Figure 2.2 at boring 162SB009. The mercury exceedance occurred in boring 162SB002 as stated in the text and did not require any further delineation. This exceedance will be shown on a nature and extent figure in the final RFI report if mercury is determined to be a COC .

Comment 7:
The table proposes sample 162003 as a shallow groundwater sample. This sample number cannot be found on the figure.

Response 7:
As stated in the text, the location/necessity of this well will be determined after the DPT groundwater investigation described in section 2.8 is completed.

SWMU 163

Comment 8:
Figure 2.3
This figure does not show SWMU boundaries. Please revise in the report.

Response 8:
The figure will be revised for the final report.

Comment 9:
Page 2.3.4, Section 2.3.1 Previous Field Work, Groundwater, lines 6-10
This states that additional samples were taken in September of 1999. The figure does not illustrate these sampling locations. Please revise this information in the report.

Response 9:
This supplemental investigation at SWMU 163 will be fully discussed in the RFI report. At the time this document was completed, the survey and analytical data had not been fully reviewed and processed.

Comment 10:
Page 2.3.5, Section 2.3.2 Data Gaps, Shallow Groundwater, lines 14-16.
States that shallow groundwater has been defined, this is not correct. There are no shallow or deep groundwater monitoring wells down gradient of the SWMU. Shallow and deep wells must be added to properly characterize the groundwater at this SWMU.

Response 10:
The groundwater investigation as described in Section 2.8 includes DPT groundwater sampling in both the shallow and deep portions of the aquifers downgradient of the site. This investigation also includes piezometers that will aid in determining more accurately the groundwater flow direction in this area. Once these data are reviewed the location and necessity of monitoring wells can be better determined. The DPT data from the SWMU 163 investigation clearly defines the extent of chlorinated solvent contamination in the shallow aquifer. The Navy understands that additional monitoring wells to monitor this contamination in both the shallow and deep portions of the aquifer may be required.

Comment 11:
The Department suggests that additional monitoring wells be added to the proposed sampling effort to fill in data gaps and complete the nature and extent investigation for groundwater at this site.

Response 11:
See Response 10.

SWMU 164

Comment 12:
Figure 2.4
This figure does not indicate the groundwater flow direction. Please revise the figure for the report.

Response 12:
The arrow was inadvertently left off of the figure. The figure will be revised. Furthermore, additional groundwater level measurements were collected in this area to better define groundwater flow at the SWMU.

Comment 13:
Page 2.4.4, Section 2.4.2 Data Gaps, Groundwater, lines 22-23.
The text states that the decision to install monitoring wells will be made on the results of the pending soil investigation. Please explain the rational to justify this line of thought. Monitoring wells will be needed before soil analytical results are received to characterize the groundwater at this site. The Navy must also determine site-specific groundwater flow directions to properly characterize the site.

Response 13:
No CMCOCs were identified in a comparison of the soil data to site-specific SSLs with the exception of thallium at one location. Soil sample analytical results are typically, if not always, used to determine source areas of contamination. Areas where high concentrations of contaminants are found in the soil are likely places to locate source monitoring wells. The extent of soil contamination, along with aquifer characteristics such as flow direction, are used to position other monitoring wells (upgradient, downgradient, cross gradient). If no contamination is found in the soil, the likelihood of there being groundwater contamination is very minimal, thus precluding the need of costly monitoring wells. There were no exceedances noted in a review of groundwater data from grid well GDK004 that is 140 feet downgradient of the SWMU. Further, there were no VOCs detected in shallow groundwater at DPT points 166GP018 and 166GP072 and no metals exceeding MCLs in the filtered sample from 166GP018. Notably, arsenic, which is the primary COC at the site, was not detected

in either the filtered or unfiltered sample from 166GP018. Additional groundwater measurements have been collected to better define the groundwater flow at the SWMU.

SWMU 693/694

Comment 14:
Page 2.5.1, Section 2.5 AOC 693, Fuse and Primer House, Former Building 117 And AOC 694, Former Naval Ammunition Depot, Clouter Island, lines 13-15
These lines state that the northern most structure is building 106, when in fact the building is labeled 108 on Figure 2.5. Please revise in the report.

Response 14:
The Building should be labeled as 106. This discrepancy will be corrected in the final RFI report.

Comment 15:
Historically, this area was used as an ammunition depot. Therefore all samples taken from this SWMU must have the analysis for explosives added to the analytical tests.

Response 15:
Thirty-two samples were collected across this SWMU and analyzed for explosives. No explosives were detected in any sample. Per the request of Paul Bergstrand (facsimile dated December 2, 1999) 10 additional soil borings were completed. Six of these borings were located adjacent to previously existing facilities representing potential sources and were analyzed for the full suite of analytes including explosives. Other contingency samples collected were aimed at delineating specific analytes detected in surrounding samples and were analyzed only for those parameter groups.

Comment 16:
The Department suggests that additional monitoring wells and additional soil samples be added to the proposed sampling effort to fill in data gaps and complete the nature and extent investigation for this site. (This information has been previously addressed when the well permit was requested).

Response 16:
A facsimile requesting additional soil samples and monitoring wells was received from Paul Bergstrand of SCDHEC December 2, 1999. These additional samples were collected per his request and will be shown in the final report.

SWMU 696

Comment 17:
Page 2.6.1, Section 2.6, lines 13-15
These lines state that the Navy is not sure if the 1000 gallon UST is still in place or not. The Navy must determine if the UST is still in place. If the tank is still in place and not in use, then the Navy must properly abandon the UST and associated piping. Please address this in the report.

Response 17:
The UST Assessment Report for UST 2509 was reviewed to verify that the tank was removed. This information along with confirmation sampling results and location of former tank, piping, etc. will be presented in the final RFI report.

Comment 18:
Page 2.6.3, Data Gaps, Surface Soil, lines 9-12
These lines state that PCB contaminated soil was removed during the IM. It is also stated that no further delineation of PCBs is required because the area is surrounded by data points. This rational would explain the horizontal extent, but it is not clear if vertical extent confirmation samples taken after the IM was completed. Please provide an explanation as to whether or not vertical confirmation samples were taken. If no samples were taken to confirm the vertical extent the Navy must take additional samples to delineate the vertical extent.

Response 18:
The Interim Measure Completion report indicates that confirmation samples were collected during the removal and that no further vertical delineation is needed. These data will be presented in the final RFI report.

Comment 19:
Figure 2.6
This figure does not show the piping runs associated with the 1000 gallon UST. Please revise the figure to indicate the piping runs in the report.

Response 19:
See Response 17.

SWMU 698

Comment 20:
Figure 2.7
This figure does not indicate groundwater flow direction for this site. This Department cannot be sure proposed wells are up or down gradient unless the groundwater direction is shown. Please revise the figure for the report.

Response 20:
The flow direction arrow was inadvertently left off of the figure. Groundwater flow is to the northeast. The well, 698002, is located immediately downgradient of 698001. The figure will be revised for the final report.

Comment 21:
Page 2.7.1, AOC 698, Building 2508, Boiler House, Naval Annex, lines 5-10.
This text explains that this area was designated as an AOC because of the lead based paint peeling from the building. The previous sample locations are too far from the building to get a more accurate reading of the lead content in the soil. The Navy should propose additional samples to better characterize the lead content in the soil adjacent to the building.

Response 21:
Samples 698SB003, 06, and 08 were taken within one to three feet of the building in areas where there was visible paint peeling from the buildings' exterior. The highest lead concentration in these samples was 113 mg/kg, well below the 400 ppm screening criteria. Given the numerous surrounding samples with no lead exceedances, lead does not appear to be a soil COC. Further, lead concentrations in the monitoring well samples was less than 3ppb, well below the MCL of 15 ppb. Additional samples are not warranted.

Comment 22:
Page 2.7.5, Section 2.7.2 Data Gaps, Shallow Groundwater, lines 7-12.
These lines state that analytes exceeded their respective screening values and will be listed under the sample locations of which they were found. However figure 2.7 does not list any analytes for any sample location. Please revise the figure in the report.

Response 22:
These were inadvertently left off of the figure. This information will be provided on the COC figures in the final RFI report.

Comment 23:
Page 2.7.5, Sampling and Analysis Plan, lines 20-22
These lines propose the location of a well down gradient of well 698001. However the figure 2.7 does not indicate which direction groundwater flows. See comment 20.

Response 23:
See Response 20.

Groundwater Strategy

Comment 24:
Page 2.8.1, Section 2.8, line 14-16
Stratigraphic control is only considered useful for vertical control not horizontal control. Please explain the rationale where by stratigraphic control is considered.

Response 24:
"Stratigraphic control", by definition, is the "degree and understanding of the stratigraphy of an area; the body of knowledge that can be used to interpret its stratigraphy or geologic history." The new borings installed will be used to interpret the structural nature of top the Ashley Formation in the western part of the annex where there is little data. Cross sections derived from these data will be useful for understanding both the vertical relationships of strata in the upper 50 to 60 feet in addition to their horizontal/lateral extent.